ABSTRACT OF THE DISCLOSURE

The present invention describes a method for fabricating an embossing tool or an x-ray mask tool, providing microstructures that smoothly vary in height from point-to-point in etched substrates, i.e., structure which can vary in all three dimensions. The process uses a lithographic technique to transfer an image pattern in the surface of a silicon wafer by exposing and developing the resist and then etching the silicon substrate. Importantly, the photoresist is variably exposed so that when developed some of the resist layer remains. The remaining undeveloped resist acts as an etchant barrier to the reactive plasma used to etch the silicon substrate and therefore provides the ability etch structures of variable depths.